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*   MICROPOLIS/VECTOR GRAPHIC USERS GROUP
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*   MUG Newsletter #49 - August 1984
*
*   Published Monthly by DAMAN
*   604 Springwood Circle, Huntsville AL 35803
*   Subscription rates:
*   North America; $18/year
*   Elsewhere; $25/year - Airmailed
*
* For Assistance in the following areas, call:
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*   Micropolis Basic, general information:
*   - Lynn from 9-5.
*   MUG/Vector Graphic & whatever:
*   - Buzz from 7-10.
*   DAMAN Software & Hardware sales:
*   - Lynn from 9-5.
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THE BEGINNING OF YEAR 5

by Buzz Rudow

Gee - Starting our fifth year. That's pretty exciting. Members frequently tell me that they didn't expect the MUG to be around this long. Users groups seldom are, it seems. Did I expect it? Guess I never gave it much thought. The group still seems to be filling a needed role. Personally, I don't see an end, but that's up to you guys and gals.

It's certainly true that the MUG has changed. Beginning with a solely MDOS - Micropolis hardware viewpoint, we've expanded to cover CP/M, Vector Graphic and Basic/Z. As you might imagine, members have varying opinions on our present editorial approach. Some think it's fine. Some have quit because we don't have enough Micropolis operating system coverage. Some have quit because they're into multi-user environments or into the IBM scene. Some have quit because we cover only the Basic programming language, and they're using C, Pascal, or some other high-level language. In general, however, the editorial concept is liked by most readers, though its implementation could be greatly improved.

Where do we go from here? More of the same, I imagine. While I'm always open to suggestions, and am particularly open to submissions, I can only write about what I know, and prefer to write about what I am interested in. That's MDOS, Micropolis hardware and Vector Graphic. But, in this area, there are a lot of areas yet to be covered.

I figure that when people require a really sophisticated multi-user system, they'd better have a dealer close by to support them. I can't do that by newsletter or phone. For the small business that just needs basic computing power, or for the hobbyist who wants to understand what's going on inside the box, we can give answers and assistance.

It's sort of like cars. My first car was a '49 Ford with a flat-head V-8. Fun to drive and easy to take apart and put back together. For years after that, I did my own auto maintenance. Not now! I open the hood, take a look at all the plumbing inside, shake my head, shut the hood and go to the Ford dealer for maintenance. Well, I don't want that to happen to my computers. I can take the top off my VG and I know what the components are. I'm beginning to figure out the MDOS and CP/M operating system; beginning to know how to modify input/output routines to affect connections to differing peripheral devices. I'm beginning to UNDERSTAND!

So that's where I think we're going from here. The Micropolis system and their Vector look-alikes are not terribly complex by today's standards, but they're powerful and versatile. Won't win at Talladega, but good basic transportation. Don't

need a pit crew to keep them running either.

As Micropolis and Vector Graphic move on to new and better concepts, the proprietyness of the older equipment and software lessens. They'll, hopefully, be more willing to supply the group with the needed information to service ourselves so that they don't have to bother with us. It's a cost savings for them and a blessing to those of us who want to understand.

The continued purpose of the MUG, then, is to make you self-sufficient in your computing, in concert with and with the support of the group.

We intent to acquire and make available the systems, parts, documentation, and personal interaction required to let you keep your Micropolis/Vector Graphic computers functional and productive for years to come.

The MUG is a clearing house, a depot, a hub. But it needs YOU. I said I'm beginning to understand. I'm beginning to understand because you members have taught me. You need to continue teaching. When you've discovered the purpose, principle, or method of implementation of pieces of hardware and software, write it up and send it in. I'll continue my efforts to acquire lines of supply for parts and maintenance. Remember that this is a group publication, not an expert dissertation. Some of you can't presently give us much insight, as you're too new at computing. But there are a lot of others out there to whom I say - ask not what the MUG can do for you, but what you can do for the MUG.

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*   BASIC/Z SPECIAL INTEREST GROUP
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BASIC/Z CORNER #18

by Steven Guralnick
375 South Mayfair Avenue, Suite 205
Daly City, CA 94015

In the last column, I said I would go through the merge sort and try to explain what I did.

First, I used a program written by Jerry Lenz which does an excellent job of generating names randomly. Here it is:

```
20 INPUT "HOW MANY RECORDS";TOTAL#
50 CLS
60 CREATE 1 "RANDOM" RECLEN 30 ERROR 70:GOTO 80
70 SCRATCH "RANDOM":GOTO 60
80 GOSUB @GETSTRING
90 CLOSE 1
100 STOP
120 LABEL @GETSTRING:REM DO THE RANDOM ROUTINE
130 FOR I#=1 TO TOTAL#
140 FOR J#=1 TO (24*(RND(0)))+2:REM GET 26 LETTERS
150 A#=(26*(RND(0)))+65:REM IN THE ASCII TABLE FOR
    CAPITAL A TO CAPITAL Z
160 NAME$=NAME$+CHR$(A#):CONCATENATE THE STRING
170 NEXT J#:REM GET ANOTHER LETTER
190 GOSUB @FILLIN
200 NAME$="":REM NULL THE STRING
210 NEXT I#
220 RETURN
350 LABEL @FILLIN: REM SET UP THE STRING FOR THE
    DISK FILE
360 NAME$=NAME$+REPEAT$(" ",25)
370 NAME$=LEFT$(NAME$,25)
381 NAME$=NAME$+FMT(I#,"9999"):REM ADD THE RECORD
    NUMBER
390 PRINT TAB(12,40);I#:REM PRINT IT ON THE SCREEN
410 LABEL @PUTONE:REM PUT IT TO DISK
420 PUT 1 NAME$+","
421 PRINT TAB(13,25);NAME$
430 RETURN
```

This is a great little program which will generate what seems to be trash but which is actually a bunch of alpha strings, randomly generated, that are a great pile of data for a merge/sort routine. Note that the record number is added on at line 381. This is normally done in the sort routine.

O.k. Now to the merge sort.

At line 120, I check for the amount of space that is left in memory by calling a function entitled FNPRINT.SPACELEFT, which is at line 2020. That does the calculation and prints it on the screen.

At line 140, I open the master file, which I label as file 1.

At line 160, I call the function FNCALCULATE.THE.RECORDS, which is at line 400. That function first establishes spaceleft minus fifteen percent which I leave out for overhead. The integer of that figure is the divided by the variable called FIELD.LENGTH& which is actually RECSIZE(1) in this case. This is a special situation. I am using the complete record length here from the randomly generated file. Thirty. But, if you were working with a much larger record length and were only using a piece of it for the sort key, then you would feed the correct length (inside the parenthesis on line 160).

Now you have the number of records which will fit into memory at one time, less the fifteen percent.

At 200, I GOSUB to the routine which does the arrays. You cannot do this in a function so I have to set the FIELD.LENGTH& value at line 200. The array routine is at line 580 and it is totally dynamic. In the DDIM, I set the array to the number of records allowed and to the field length.

At line 220, I call the function FN.HOW.MANY.FILES, which is at line 720. This takes in how many records are allowable and the total records the memory will hold at one time. In other words, if you've got five hundred records and can hold 100 in memory at one time, then you will need five files. The files start at 2 and the master sorted output file is the last number+1 so it would be files 2, 3, 4, 5, 6 and 7.

Now, go sort the records, by a call to the sub-routine at 320. The sort is at line 800. The PUT statements are there, also. When it is finished, you will have a series of temporary files filled up with sorted hunks of the original file. The master output file (called SORTED.DAT) is open and awaiting the merged product.

Now, at line 360, we go the label called MERGER, which starts at line 2180.

I fooled around with the merger routine for days. The sort goes fast because you are just reading from the master file and then sorting and then writing to the temporary files, one after another so there's no delay. The merger involves reading from all the temporary files, finding the low string and then putting it out to the SORTED.DAT. The routine I came up with is fast--there's faster.

First, set up the GETSEEK pointers to 1 in all the files.

Then, reset the DDIM statements, erasing the old one. What you are doing here is setting up the sorted output in memory, to save time.

Set up a test string with nothing but a load of Z's (at line 2580).

Starting at line 2500, go into a loop by reading one record from each of the temp files and find the smallest one (line 2620) and then stash it in memory as A\$(I&).

Replace the record (at line 2665).

When the memory fills up (at line 2720), go to the output routine and dump the entire array to the

SORTED.DAT at one time.

Go around again.

When the records are gone and the array is emptied, close down and quit (at line 2740).

Comments?

By the way, if anyone wants this sort/merge without having to type it all in, and Jerry's random generator, send me an 8" disk.

See you soon.

BASIC/Z FOR MDOS

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Be sure to see Lynn's article under the MDOS SIG.

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(End - Basic/z SIG)

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VECTOR GRAPHIC SIG

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The following is reproduced from the July 16, 1984 edition of Computer Systems News.

VECTOR GRAPHIC INTRODUCES 16-BIT MULTIUSER SYSTEM AND LOCAL AREA NETWORK

by Dan Murphy

Vector Graphic Inc., in a move designed to reposition its products away from the volatile personal computer marketplace, has come out with a new 16-bit multiuser system and a proprietary local area network.

At its recent annual dealer meeting, Vector introduced a new multiuser version of the Vector SX supporting four users and a 16-bit implementation of its LINC token-passing LAN. Vector previously sold only an 8-bit version of LINC.

Senior sales and marketing vice-president Richard Hahn said the multiuser market is better suited for Vector both because of its high-performance products and an installed base of value-added dealers. "The personal computer marketplace is a killing ground, and we don't want to be one of those companies like Osborne or Victor," he said.

"We got hurt there, there's no question about it, and with AT&T coming in, that's another reason not to be in the low end of the market. We're committed to a market where we've got some unique capabilities and a solid dealer network. We're positioning in a market where dealer margins will be preserved and our margins will be preserved," he said.

The move into the multiuser arena completes a shift away from the traditional PC market that Vector started last year when it said it would concentrate on marketing to vertical markets instead of trying to compete in the general microcomputer market where the company has taken its lumps in recent years, primarily from the entry of IBM into the PC market.

Hahn said recent reports that Vector is planning to bring out its own PC-compatible machine are not true, although the company had examined that possibility through an OEM deal. "If we did that, it would only be incremental business," he said. "There was a lot more probability to that four months ago, but the margin problem has gotten pretty severe."

Hahn wouldn't say which companies Vector had talked

to about a private-label PC deal, although one report claimed the company was negotiating with Corona Data Systems Inc. Corona chairman Robert Harp was a founder of Vector, and senior sales and marketing vice-president Jim Alexander also previously was with Vector.

Vector president Bernard Horn said Vector has always been a high-visibility company and that with the new products and direction Vector is now in a position to capitalize on that visibility. "Our bad news profile is about over; there's not a lot more we can do bad news-wise," he said.

Vector will be stepping up its advertising program, he said, but not on any grand scale. Instead, Vector will work with the dealers offering co-op ads on a local level targeting specific vertical markets.

The new VMX is four-user version of the VSX 8086-based system that was introduced in March. The multiuser VMX includes disk storage capacities of up to 36 Mbytes and an optional streaming tape subsystem incorporating a Wangtek Inc. 1/4-inch tape drive. The tape subsystem will be available later this month and is priced at \$2595 for a 20-Mbyte model, while a 45-Mbyte subsystem sells for \$2995.

In addition to Concurrent CP/M, the system also supports MS-DOS and, through a proprietary emulator, 8-bit CP/M.

Existing VSX systems can be field-upgraded to multiuser capability for \$2110. The upgrade kit includes an additional workstation, the Concurrent CP/M operating system, new PROMs for the system, and a memory upgrade.

A two-user VMX system with a single Control Data Corp. floppy disk drive, a 10-Mbyte Seagate Technology Winchester drive, Concurrent CP/M-86 and 384K bytes of memory is priced at \$8580. Additional MT-50 terminals are priced at \$745.

A three-user system is \$9325, while a four-user configuration with 512k bytes of memory sells for \$10,520. The same systems with a 28-Mbyte hard disk drive are \$9,250 for two users, \$11,025 for three users and \$13,025 for four users. The high-end models with an Atasi Corp. 36-Mbyte Winchester drive sell for \$10,520, \$12,220 and \$14,220 for two, three and four users, respectively.

The LINC 3.0 LAN can connect up to 32 Vector single user or multiuser computers. LINC uses twisted-pair cabling, and network stations can be placed up to 1000 feet apart without repeaters. Vector offers SABRE-Net repeaters that can be connected to allow stations to be up to 1000 feet apart.

The LINC starter kit supporting three users is priced at \$1950, while a 10-station network is \$5995. LINC 3.0 is scheduled to be available next month. The SABRE-Net repeater sells for \$250 and is currently available.

Vector also brought out the VSX-1000 intelligent diskless workstation to operate on the network.

Vector dealers were enthusiastic about both the new products and the direction Vector is taking.

Ralph Dean from Southwest Business Systems in Norman, Okla., said Vector is in a better position than it has been in for quite a while. Dean has been a Vector dealer for five years and sells only Vector products.

"The new product line is one that is coming at just about the right time, but the management team is what's making the big difference. I see bright days ahead for Vector Graphic," he said. "What affected them on the corporate end really had an effect on me, so I came out here to see with my own eyes and talk with the new management team and see if they're going to make it, and I'm glad to say that I think they are."

"These guys came on with all the chips down; we were being compared with Victor and Osborne. The decisions that were made were not made right all the time, but we're still here and Victor's not. For the first time in a long time, I really feel positive about Vector."

Dean was also impressed with the new Vector products. "The multiuser systems are the ones that Vector needed for some time, and the ability to connect 32 users on the LINC system also looks like a highlight," he said. "You can compare the SX Series with anything on the market today, and the only thing it has going against it is a lack of national recognition."

Sam Lyles of Dallas-based Decision Control Systems, said Vector has given the dealers an excellent product, and it's now up to the dealers to take advantage of the product's technical superiority.

"It's the first system in the micro range that's come along with the processing speed and storage capacity to let us compete with the minis, and that just wasn't possible before," he said. "There are lots of concepts where you can replace function for function anything the minis are doing."

Lyle said he isn't at all concerned by Vector's recent problems and the possibility of the company not being a long-term survivor in the computer market. "There's been a lot of worry about small companies like Vector going under, but Vector's been an incredible survivor," he said. "In all probability, IBM's going to shut off its PC; it's an old product now. IBM has no qualms about cutting that product off and chopping everybody off at the knees."

"For the end user, what's the difference between a company's business decision to cut a product off or the company going broke? You're in the exact same boat."

"What I've been promoting is make your system decision based on your operating system and high-level languages, and you won't get hurt. I look at the hardware as a snapshot in time, and right now the Vector SX is the best piece of equipment on the market, bar none."

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Editor's Note: The Vector SX system, as reported in an earlier newsletter, uses a 96 tracks per inch, soft-sectored disk format. This is, of course, not at all compatible with the older 100 TPI, 16-hard-sector format.

On the brighter side of things, I've had several conversations with Vector about becoming a dealer for them. My desire is to handle the parts and software for the older equipment. We'll see how it turns out.

The following is a related article from a now unknown publication (I lost the input sheet), citing further evidence for Vector's continued existence.

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VECTOR GRAPHIC SEEKS STABILITY WITH NEW PRODUCT

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By Steven Burke

Vector Graphic Inc., which has lost \$5.3 million in the last nine months, has introduced several micro-computer products in an effort to pull out of a financial tailspin.

The personal computer manufacturer announced a new multi-user system based on its Vector SX microcomputer and an enhanced version of its local area network at an international computer store dealers meeting in Ventura, CA, late last month.

As a result of the company's heavy losses, the number of computer store dealers and distributors

carrying Vector computers has dropped from a high of 455 worldwide to 279, according to a Vector spokesman. The company has laid off 140 employees since 1982, including 40 people on June 15.

The company's losses for the last seven fiscal quarters amount to approximately \$8.3 million, including a high of \$2.7 million during the last quarter ended April 1.

Earlier this year, Vector considered introducing an IBM-compatible computer. The possibility that Vector would market such a product has been hurt dramatically by price cuts on the IBM microcomputer line, a Vector spokesman said. He noted, however, that the company has not ruled out the possibility of introducing an IBM-compatible machine.

Since becoming president and CEO two months ago, Bernie Horn reduced overhead at the company by about 25 percent. He refused to disclose specific cost figures. "The overhead was just too big," he said. "We had to bring it down... In many ways it was a fat company." Horn has consolidated several departments within the company including the public relations department.

The cutbacks included eliminating duplication of duties. Horn noted that both customer support and manufacturing groups were doing inventory control. "A \$40 million company can do that," he said. "A small company can not."

Horn claimed the critical departments within the company, customer support and field sales, have not suffered any cutbacks.

Horn said Vector had not considered filing for bankruptcy under Chapter 11 and stressed that the firm is in much better shape than other companies that have been forced to seek protection from creditors. "I haven't considered it (bankruptcy)," he said. Horn pointed out the company has \$13 million in assets and \$6 million in liabilities. "Compared to most companies we have a good balance sheet," Horn asserted. "From an order point of view we have stabilized and we're going up."

(End - VG SIG)

*
* MDOS SPECIAL INTEREST GROUP *
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MDOS BASIC/Z PRICE REDUCTION

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by Mrs. Buzz

Me again - this is getting to be a habit. This month it's another item ALL MDOS users will be interested in. System/Z (Bob Zale) is offering BASIC/Z for MDOS for \$85.1 WOW!, what a deal!

I'm sure some of you are familiar with BASIC/Z, but I'll refresh your memory and inform those of you who aren't familiar with Basic/Z. You might also read Buzz's review articles on Basic/Z for MDOS in newsletter #12, 13, 14 and 20.

First and probably most important it's a compiler. It takes your programs written in MDOS BASIC and compiles them into machine language which makes it run faster and takes up less memory. You can also write all your new programs using Basic/Z. As you hit the return after each line, and if you've made a mistake, Basic/Z will automatically put you in the edit mode. It automatically generates the line numbers for you, tells you how big your program is, what your variables are and has a built-in sort routine like SORT/A.

Also, if you've read the monthly Basic/Z articles by Steve Guralnick, you'll have a general idea of what Basic/Z is. However, Basic/Z for MDOS is not as powerful nor does it have all the enhancements.

Basic/Z for MDOS is Grandfather to all Basic/Z's. Zale wrote it first, but since the majority of computer users were using CP/M, it was a natural business move for Zale to convert Basic/Z to run under CP/M.

I'm not quite sure how to convince you about the worth of this product, but these are just some of my thoughts. There are very few of us using the MDOS operating system and there is NO ONE writing a compiler program for it. In fact, there are very few programs being written to run under MDOS these days. If you're committed to staying with MDOS and writing your own programs, Basic/Z is well worth the investment. Actually, it's worth more but I couldn't talk Zale into a higher price.

What support can you expect? We, or Zale will help with any bugs, that is, if the manual says it's suppose to do something and it doesn't. There will be no further enhancements to Basic/Z for MDOS. What it is, is what it is, but what it is is pretty good.

While on the subject of programs running under MDOS I will also mention other programs that System/Z offers. All of these programs are very good and we've used, and still use, them. BEM - a auto line generator for writing programs without having to type in the line each time. SORT/A - an assembly language program that will sort 1,000 zip codes in 4 seconds (I might say I use this one daily, and am particularly proud of it's speed). EDIT/S - a text editor for generating letters and documents. It is not however, a wordprocessor like WORDSTAR and SPELLBINDER, but it doesn't cost as much either. Coupled with Textwriter for MDOS, one has a pretty powerful wordprocessing capability. CRUNCH - compacts (not a compiler) programs to get rid of non-command functions. This allows more memory and the program runs faster.

If you would like more information on any of the programs please call or write.

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PART 3 of INTRODUCTION TO PROGRAMMING IN MICROPOLIS "BASIC" FOR SMALL BUSINESS USE =====

by E. W. Edmund
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P.O. Box 601, Camden NJ 08101 (609)/858-1019

PRACTICE SESSION

Here is a small program with several new features and a chance to review what we have learned.

```
10 REM SAMPPGM2
15 PRINT CHAR$(26):REM - CHANGE TO YOUR "CLEAR
   SCREEN" COMMAND, SEE NOTES BELOW
20 PRINT TAB(30); "ENTERING INVENTORY COSTS"
30 PRINT
40 PRINT TAB(20); " PLEASE ENTER ITEM QUAN.";
50 INPUT B
60 PRINT TAB(20); " PLEASE ENTER ITEM PRICE";
70 INPUT C
85 P=1
90 PRINT TAB(70); "PAGE";P
95 D=B*C
100 PRINT TAB(30); "INVENTORY COSTING"
110 DATA QUAN., PRICE, COST
120 DATA 1010, REGULATOR, DEPT 10
130 READ B$, C$, D$
140 READ N, A$, M$
150 PRINT TAB(34); B$,C$,D$
160 PRINT TAB(34); "=====", "=====", "====="
170 F$="ZZZZZZV.99"
180 PRINT N;TAB(9);A$;TAB(23);M$;TAB(34);B;TAB(46);
190 PRINT FMT(C,F$);TAB(62);FMT(D,F$)
300 END
```

Although there is a kernel of usefulness to the program, it is primarily a tool to describe the Basic commands. One would not normally ask for user input of item quantity and price without first displaying what the item was.

Notice on lines 150 and 160 that the comma causes the spacing of the print out to be 16 spaces apart.

It is possible to space anywhere on a line by means of the use of the TAB(); command. The actual position of the specified print-out is shown by the number in the parenthesis.

Note on lines 180 and 190 the use of the semi-colon between items instead of commas. Remember the comma orders the 16 spaces between items and if you are to use "TAB();" to have a reduced spacing, then it is necessary to also use the semi-colon between items in the list to avoid jumping over the place desired.

Always be sure to use a semi-colon after the closing of the parenthesis. - TAB(27);

Lines 50 and 70 assign memory spaces that are to accept the figures INPUT by the operator. Lines 40, 60, and 180 end the line of characters with a semi-colon so result will be combined with the next line.

Lines 180 and 190 are command lines, a constraint is that no more than 250 characters be used with any single line number.

Line 90 sets up a method of printing out a page number. We will later expand on this with a looping to make it auto-matic.

As has been explained, the first item in a READ statement takes the first DATA item, then the next READ takes the next DATA item and so on until all READ items are satisfied and have been stored in memory as the symbols you have selected.

Line 150 will print out B\$ (Quan.) starting in space 34 then the comma after B\$ will advance the print out of C\$ 16 spaces across the page, etc.

Line 170 sets up the format "FMT" for F\$ as to how the figures involving prices are to be outputted with a leading \$ sign and decimal places for cents. It will also keep the figures in line based on the "V" next to the decimal mark. See the following paragraphs for complete information on the use of "FMT".

Line 95 multiplies quantity by price so as to have available in memory (D) the value of the item on hand.

Running the program would produce the following results (edited to fit on the MUG page):

```

ENTERING INVENTORY COSTS
PLEASE ENTER ITEM QUAN.? 32
PLEASE ENTER ITEM PRICE? 233.45

```

PAGE 1

```

INVENTORY COSTING
      QUAN.    PRICE    COST
=====
1010 REGULATOR DEPT 10  32  $ 233.45  $ 7470.40

```

CLEAR SCREEN: The various makes of computers have CLEAR SCREEN commands that are determined by the hardware. Here are a few:

```

Hazeltime CRT   - PRINT CHAR$(126)+CHAR$(28)
ADM5 & ADM3A    - PRINT CHAR$(26)
VECTOR          - PRINT CHAR$(4)
SOL              - PRINT CHAR$(11)
EXIDY SORC      - Same as Hazeltime
DYNABYTE N      - PRINT CHAR$(12)

```

You can simplify by saying C\$=CHAR\$(126)+CHAR\$(28) and then use C\$.

This segment of program is simply to practice using some of the commands. We will come back to it later and make it more useful. To save it type: SAVE"N:1:SAMPPGM2"

SPECIFYING METHOD OF FIGURE OUTPUT "FMT" FUNCTION

Micropolis has a simple way of allowing specification as to the way in which figures are to be output.

```

50 Y$="$ZZZZZZV.99"
120 PRINT FMT(X,Y$)

```

The formula on line 50 produces a figure with a leading \$ sign. If you do not want a \$ lead simply leave it out of the formula. Each Z in the formula provides space for a digit so our example would take care of a figure up to \$999999.99.

The "V" in the formula specifies the decimal point alignment. If you do not specify a V then the decimal point is assumed to be at the far right, resulting in dropping the fractional part of the number.

The .99 tells the computer to put two digits (the proper ones) in the decimal position, after the period. You could have 3 or 4 or more decimal places if desired.

If you do not allow enough space (Z's) for the number you attempt to output, the print-out will be filled with question marks as (?????etc.). If this happens the machine will probably retain its proper balances but you will have to reset your program to allow a larger figure.

Line 120 tells the computer how to use FMT in it's printing. In the parenthesis you are saying in effect, "print X the way Y\$ tells you to". Y\$, of course, was previously set up on line 50 with its formula.

Another form of the FMT allows action on only a specific variable:

```
95 PRINT FMT(A,"ZZZZV.99")
```

In this case A is to be printed in the form next specified.

In using FMT don't be concerned about figure constants or variables, this function converts them to strings automatically.

FMT is a general purpose tool and several different FMT's can be in one PRINT or PUT statement to give results as needed in several columns.

An example of versatility is accepting date INPUT (D) as: 31582. By using FMT(D,"Z9/99/99") in the PRINT command you would get 3/15/82 on print-out.

For Social Security numbers: INPUT (F) as 139038392 and then PRINT FMT(F,"999-99-9999"). This saves 2 bytes on disk for each name entry on long lists!

DECISION MAKING - GOTO & GOSUB

Here are two commands that allow you to qualify commands or make decisions depending on varying circumstances.

GOTO - The two words are written together to save space and they are recognized that way. This is a fairly straight forward command where, depending on the result of a decision, control is transferred to another line in the program.

GOSUB - This is a similar command except that after going to the new location in the program the computer will be looking for the word "RETURN" in the program. When it encounters this word, control is returned to the next program line in sequence from where it went GOSUB. Here is an illustration:

```

150 GOSUB 200
160 PRINT A,B
170 END
200 PRINT "PLEASE ENTER QUAN. OF APPLES,ORANGES-";
210 INPUT X,Z
220 A=X+1:B=Z-2
230 RETURN

```

This example can be imagined as just being an in-between part of a larger program and has some interesting aspects.

Line 150 sends control to 200. Here it is told to print out the words between the quote marks and the computer will show a question mark after the request. The two figures requested must be separated by a comma when they are entered by the operator.

Line 220 changes the entered value and assigns new memory locations for the information as A and B. The original values are still in memory as X and Z and may be used if needed.

Notice on line 220 that the colon is used for the second expression instead of going to another line number. This is optional.

Line 230 is the RETURN and control is now returned to the very next statement after the original GOSUB. This causes the printing of the values of A and B. A would be printed in space #2 from the left margin and B would be printed in space #17. The first space is not used unless there is a minus sign to be printed. The next number starts 16 spaces away from the first number printed.

We will not need to keep this program segment, type DELETE <c.r.> and it will be gone.

DECISION MAKING - IF _____ THEN _____

Here is another way of decision making on the part of the computer. It allows a program to continue depending on the restrictions imposed.

Here are some examples:

```
10 IF A=B THEN PRINT "PHILLIES WIN"
120 IF A=2 GOTO 100
60 IF A=4 THEN 220
380 IF A=2 AND C=3 THEN D=2: GOTO 420
```

On line 10 the statement is executed if the logic is "true", otherwise it is ignored and the program continues on the following line. Notice that line 380 requires two truths before it will be executed.

Line 120 and 60 accomplish the same result and this use is optional.

Line 380 - If the condition is not met then control goes to the following program line (probably #390).

DECISION MAKING - ON _____ GOTO

The two previous decision making commands transferred control to only a specified line in the program. This ON _____ GOTO form allows a decision with the option of several lines in the program to go to.

50 ON Q GOTO 110,220,250,340 etc.

Imagine a list of "Menu" items offering choices numbered (1), (2), (3), (4), etc. The operator is asked to choose.

If Q equals 1, control will be transferred to line 110. If Q equals 2 control goes to line 220 and if Q equals 3 control goes to 250, etc. This can continue on a longer list of numbers. Control on arriving at the number specified would then produce the program requested.

If Q were to be a decimal figure, i.e., 2.678 it would be truncated to 2 and line 220 would get control.

If the value of Q turned out to be zero or the value of Q was more than the number of following line numbers, then control would automatically pass to the next line number after the ON _____ GOTO

statement.

COMPARATIVE SYMBOLS

Sometimes called "Relational Operators", these are typewriter characters that are assigned the following special meanings.

SYMBOL - MEANING	(the next figure or symbol)
< - Less than -	" " " " " "
> - Greater than -	" " " " " "
= - Equal to -	" " " " " "
<= - Less than or equal to	" " " " " "
>= - Greater	" " " " " "
<> - Not equal to -	" " " " " "

The comparison generated by these symbols gives a result that is either "true" or "false". The data to be compared must be of the same type, i.e., either numbers compared or alpha comparisons. In the case of alphabetical comparisons it is done from left to right, character by character, until a miss-match. If the same, they are "equal".

CONCATENATION

At times it is necessary to join two words or groups of words or letters, "Strings", into one word or one group. To do this we use the + mark. If A\$ had the meaning of "ball" and B\$ had the meaning of "park", then A\$+B\$ would produce "ballpark" when printed out. This is the same sign we use for addition when dealing with figures.

MATHEMATICS

Some additional comments about mathematics are useful. Computers are used for the most involved computations and even our small machine can do all kinds of exotic things. We, however, are only going to be concerned with the usual office type of math involving addition, subtraction, multiplication and division.

It is important that we understand the machine's METHOD of doing its math.

```
60 DATA 10,21,30,8
70 READ A,B,C,D
80 B%=A+B/3+C*D-6
90 PRINT B%:REM - 10+(21/3)+(30*8)-6
99 END
RUN <C.R.>
```

251

The computer works from left to right going out the line of symbols, in the above case, figures. HOWEVER, it first does its multiplication and division and then goes back and does its addition and subtraction. Each is of equal value, i.e., it would do either a division or a multiplication in going from left to right depending on which it encountered first. The same applies to the addition and subtraction.

It is necessary that you write the formula the way you wish the results to come out and to check the formula for its results. If parenthesis are put around some of the symbols they will be done first and if one set of parenthesis are nested inside of another, the innermost will be worked on first. After them the balance of the math would be performed as detailed previously.

If our line 80 had been:

```
80 B%=A+B/3+C*(D-6)
RUN <c.r.>
```

Our result would have been entirely different! In the first example it was 251, in the second only 77.

One of the first things we like to do with math is simple counting. Here is how to count from 1 to 10.

10 A=0
20 A=A+1

On line 10 we set up a memory space for A with a value of zero. On line 20 we add 1 to the zero so A now has a value of 1.

Now we will "loop" back to A, printing it each time, and adding 1 again until we have 10 and stop the loop.

```
30 PRINT A;
40 IF A<10 THEN 20
50 END
RUN <C.R.>
```

1 2 3 4 5 6 7 8 9 10

Line 30 has a semi-colon after the A so as to print out the numbers closely. Notice on line 40 the use of the IF...THEN command. It makes a comparison and a decision.

Like to try using your computer as a calculator? Enter this:

```
10 INPUT A$: EXEC "PRINT"+A$: GOTO 10
RUN <C.R.>
```

When the ? appears, give it any math problem, i.e., 345.6/52.3 or multiplication, square root, etc.

Enough for this month. Next time we'll go into more depth on loops, and also cover the built-in routines for handling strings and figures.

.....
(End - MDOS SIG)

```
*****
*****
*                                     *
*               ADVERTISEMENTS       *
*                                     *
*****
```

DAMAN CLOSE-OUT SALE

=====

The following software has been sitting around DAMAN for months, maybe years. Since it isn't doing us any good here, we'd like to move it to your home, at out loss. These programs will NOT be supported by DAMAN. The software may be ordered in either Micropolis/Vector Graphic, or 8" formats. We will convert whatever its natural state to your format. Add \$3 shipping to each total order (not piece). VISA and Master Card accepted without normal 3% surcharge.

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COMPU-MAX

The set of Compu-max accounting programs are for the Micropolis Basic, running under the Micropolis Disk Operating System (MDOS) - not CP/M. A nice thing about all of these programs is that they all include source code. Modify to your heart's content. Convert to Basic/z for MDOS for speed, or for conversion to CP/M.

These programs were thought to be potential big sellers. Not so. Most people do their accounting in CP/M, or if under CP/M, with Data Smith's Book-keeping & Payroll. So, the following are available, until stock runs out.

Program	List Price	Sale Price
-----	-----	-----
Micro-Ledger	\$140	\$ 84
Micro-Accounts Payable	\$140	\$ 84
Micro-Accounts Receivable	\$140	\$ 84
Micro-Inventory	\$140	\$ 84
Micro-Personnel	\$140	\$ 84
Maxi-Ledger	\$350	\$210
Order Entry	\$350	\$210

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SUPER SOFT

Super Soft, a recognized brand name, produced a wide line of CP/M software. It looked good to me, as their dealer prices were good and many types of software could be ordered from one vendor. For a variety of reasons, sales haven't met expectations.

ScratchPad is a SuperComp type of spreadsheet. Its matrix of rows and columns allow you to easily enter and change data. Reports can be generated to your screen, directly to your printer, or placed in a disk file for later merging with another report or document using virtually any word processing system.

Stats-Graph is a two-fold statistical display program. First, it performs statistical analyses on user data; and second, it provides graphic formats for displaying user data and the results of statistical analyses. No special graphics hardware is required.

Tiny Pascal is a subset of standard Pascal. Source code is provided to the entire compiler and runtime library with each diskette. This means that you will have every line of source code used in the Tiny Pascal system.

Utilities I and II are a collection of versatile general purpose routines that can speed program and system development. Among the programs are routines to search, compare, remove, erase, archive, perform checksums, count, sort, translate, replace, calculate, print, concatenate, and split.

Program	List Price	Sale Price
-----	-----	-----
Utilities I	\$ 60	\$ 24
Utilities II	\$ 60	\$ 24
Scratch Pad	\$295	\$118
Stats-Graph	\$200	\$ 80
Optimizer	\$200	\$ 80
ADA	\$300	\$120
Tiny Pascal	\$ 82	\$ 34

.....

MISCELLANEOUS

Data Vu likes to compare themselves, favorably, to dBase II. It is a relational data base manager with a report generator and automatic form and menu generators. While I'm sure it isn't as good as dBase II, there's a whale of a deal here.

Active Trace provides information about a Basic-80 program as it runs, displaying line numbers and variable values. Also provides cross-reference facilities.

Cardfile automatically stores, retrieves, and displays information that is typically kept in index files. Requires your own text-editor or word processor for data entry.

Act-80 is an 8080 assembler from Sorcim. Calc-Star is Micro Pro's spreadsheet. Date Book II is a professional daily calendar program. Milestone is a project management tool.

Program	List Price	Sale Price
-----	-----	-----
Active Trace	\$125	\$ 60
Mc-Call	\$ 85	\$ 41
Calc-Star	\$195	\$ 90
Date Book II	\$295	\$150
Milestone	\$295	\$150
Cardfile	\$ 89	\$ 43
Act-80	\$175	\$ 92
Data-Vu	\$250	\$ 75
Data-Vu (Kay-Pro)	\$250	\$ 75

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INVENTORY REDUCTION

=====

The following software will be supported by DAMAN, and is up-to-date product. We simply want to reduce our inventory. Prices hold only for amounts in inventory.

Program	List Price	Sale Price
Info-Star	\$495	\$356
Total Account Partner	\$395	\$284

PRINTERS

=====

The Star line of printers is really quite a deal. I know you can purchase these printers less expensively elsewhere. What we hope to do is guarantee your satisfaction. We've experimented with interfaces and are quite sure we can make them work in your situation. Positive we can make them work with a Vector. So positive that if you aren't satisfied, return them within 30 days for a full refund.

If you care to order one of the printers, described below, from DAMAN, we'll need to know some things about your system to be able to configure the printer for your components and software. Some items, such as board modifications, will have to be done by you, or you'll have to send the board to us. Normally, it isn't a big problem to do, and we'll send complete instructions and be available on the phone for assistance.

In general, the Star line is compatible with Epson protocol. All printers have graphics modes. The STX-80 is a 60 cps, thermal paper, parallel interfaced printer with a 1-line print buffer. The Gemini is a 120 cps, parallel interfaced printer with a 816 character print buffer. The Delta is a 160 cps serial or parallel interfaced printer with an 8K print buffer. The Radix is a 200 cps, serial or parallel interfaced printer with a 16K print buffer and a "near letter quality" print mode. The STX, Gemini, Delta, and Radix are all dot-matrix printers. The distinction of the "10" and "15" is the size, in inches, of the paper carriage. The

Powertype is an 18 cps, serial or parallel interfaced, impact (fully formed characters) true letter quality printer with a one line print buffer.

Price 1 of the two DAMAN prices listed below is for orders which are pre-paid by check or money order, or are COD (There is an additional \$2 COD charge). Price 2 is for accounts and charge card purchases. Both prices include ground UPS shipping.

Printer	List Price	DAMAN Price-1	DAMAN Price-2
Stx-80	\$199	\$177	\$182
Gemini 10X	\$399	\$328	\$338
Gemini 15X	\$549	\$448	\$461
Delta 10	\$549	\$443	\$456
Delta 15	\$799	\$645	\$665
Radix 10	\$849	\$723	\$745
Radix 15	\$995	\$845	\$870
Powertype	\$499	\$426	\$439

Accessories	List Price	DAMAN Price-1	DAMAN Price-2
Gemini Serial Interface	\$ 59	\$ 56	\$ 58
Serial Interface with 4K Buffer	\$119	\$111	\$114
Serial Printer Interface Cable		\$ 25	\$ 26

*
* EXTRA SPECIAL STAR RADIX PRINTER SALE *

DAMAN is getting a price break, for a limited time, on the RADIX model printer. Until October 1, you may purchase the RADIX 15 printer for \$762 (price 1) or \$785 (price 2), or the RADIX 10 for \$668 or \$695. All guarantees are the same as stated above.

These are class 200 cps printers with 50 cps near-letter-quality modes. Really looks good. Included in the RADIX features are automatic single sheet insertion, 240 x 144 ultra-hi-resolution bit-image graphics, and a short form tear-off (useful for invoices, etc.). Handles single sheet, rollpaper, or sprocket-fed continuous-form paper.

*

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